National Meter & Automation

Improving AMI implementation using mobile AMR

BACKGROUND

Many Itron customers implementing a ChoiceConnect Fixed Network with 100W water communication modules (also known as ERT® modules) look to their distributors to help install their new fixed network systems in a rapid, efficient and cost-effective manner. Part of the challenge for a distributor is to change the bubble-up mode of the endpoints as the fixed network infrastructure becomes available without a gap in meter data collection for customer billing. The distributor needs to be conscious of the costs on the customer's behalf and use whatever tools and resources are at their disposal to make a seamless transition from Automated Meter Reading (AMR) to Advanced Metering Infrastructure (AMI). Using the "Mode Change" feature of Itron's MC3 drive-by mobile data collection system, distributors are able to perform this work in the field in a shorter amount of time and at significant savings to both the end customer and the distributor.

Typically, first time AMR installations include programming 100W water communication modules in mobile/handheld mode, optimized for walk-by or drive-by meter data collection. When a customer later invests in a ChoiceConnect Fixed Network system, the water communication modules need to be reprogrammed to fixed network mode, optimizing the endpoint for reading using a fixed network's Cell Control Units (CCUs) and repeaters.

Customer

- National Meter & Automation
- Serving customers across six western states

Challenge

- Streamline transition from AMR to AMI
- Easily reprogram ERT modules to fixed network mode

Solution

- Remote reprogramming of 100W communication modules using Itron's MC3 Mobile Collection System and MC software v3.6 or later

Switch endpoints from AMR to AMI with Itron's MC3 Mobile Collection System and software

Distributors face the problem of revisiting each meter to reprogram the 100W module, costing additional time and resources. Being sensitive to the need for reducing costs, Itron created a drive-by reprogramming feature in the MC3 Mobile Collection System that can rapidly "flip" 100W modules to fixed network mode, resulting in faster installations for distributors.

National Meter & Automation has efficiently moved three water customers in California and two in Arizona by utilizing the Itron MC3 system.

OPPORTUNITY

National Meter & Automation serves approximately 50 utility customers in six western states (Arizona, California, Colorado, Montana, Nevada and Wyoming), with individual meter populations ranging from 500 to over 65,000. As customers transition from AMR to AMI, National Meter & Automation is called upon to supply both the Itron fixed network infrastructure and uninterrupted billing during the changeover. Richard MacKendrick and Dennis McConville, implementation specialists with National Meter & Automation, are no strangers to this requirement.

In 2012, MacKendrick and McConville were introduced to an Itron engineering tool called the Itron Mobile Configurator, a specially modified MC3 system that helped switch the mode of 100W water communication modules. This became a game changer for National Meter & Automation due to the simplified process it provided, and they described it as a "wonderful tool." Later, in 2013, Itron released MC software v3.6, which included a new feature to make remotely reprogramming 100W modules a breeze. National Meter & Automation no longer needed to contract with Itron to bring the Mobile Configurator, instead they purchased their own MC3 and simply use MC software v3.6 (or later) with it.

Since then, National Meter & Automation has efficiently moved three water customers in California and two in Arizona by utilizing the Itron MC3 system. Customers converted to AMI ranged in size from 500 to 6,000 meters, each needing endpoint reprogramming as their fixed network was rolled out. Instead of hiring more employees and deploying them with work orders to change 100W bubble-up modes one-by-one, National Meter & Automation completed the work easily with just one MC3. Using MV-RS route files supplied by the end customer, National Meter & Automation uses the MC3 to assign a Mode Change command and then drives the route. Using geolocation data, the driver can watch dots simply disappear from the map as the 100W modules are reprogrammed.

MC3 Mobile Colleciton System with Toughbook

Without the MC3 Mobile Collection System, reprogramming could take nearly five minutes per meter, totaling up to three months for one field technician.

During reprogramming, regular meter reads and other advanced AMR commands, such as datalogging, can also be performed. After the route is finished and an export created, a .csv file containing the results of the reprogramming session is included. This file is reviewed for overall success and the need to revisit any stragglers that may not have changed modes. The finished route files with data collection results are returned to the customer for billing purposes, if needed. When the driver leaves the field after a mode change, all the reprogrammed 100W modules are ready to be picked up by the fixed network.

RESULTS

In a typical mode change drive, National Meter & Automation is able to reprogram between 1,200 and 1,500 100W water communication modules in a two-hour session. The largest number of endpoints National Meter & Automation has switched to fixed network at one utility is 6,000. Without the use of 100W modules or the MC3, National Meter & Automation would have needed to either change each meter to a compatible endpoint or revisit each endpoint with Itron FDM Endpoint Tools in order to reprogram. Without the MC3, reprogramming could have taken nearly five minutes per meter, amounting to up to three months for one field technician.

Utilizing Itron's MC3 with Mode Change feature, National Meter & Automation could have changed the mode of all 6,000 endpoints for one utility in a single eight-hour day. However, most customers are not ready to change all meters at once. The flexibility of the MC3 allowed National Meter & Automation to switch a single route of endpoints in one day based on what the end customer requested. This allowed the staged implementation of the fixed network without causing a disruption to normal data collection activities.

The advantages using 100W modules and an MC3 system to transition customers to a fixed network is clear. With the ability to efficiently move endpoints from walk-by or drive-by mode to fixed network mode using the Itron MC3, these products should be the choice of water utilities everywhere. As stated by National Meter & Automation, it "makes the process simple."

MC3 Safety Harness

MC3 Pedistal Mount

MC3 Sled Mount

Itron

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